Docket No. 16111-US *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Anderson**	§	
	§	Group Art Unit: **3689**
Serial No.: **10/743,587**	§	
	§	Examiner: **Fisher, Paul R.**
Filed: **December 22, 2003**	§	
	§	Confirmation No.: **7986**
For: **Locating Harvested Material Within a Work Area**	§	

78833

PATENT TRADEMARK OFFICE
CUSTOMER NUMBER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF (37 C.F.R. 41.37)

This brief is in furtherance of the Notice of Appeal, filed in this case on January 28, 2010.

A fee of $540.00 is required for filing an Appeal Brief. Please charge this fee to Yee & Associates Deposit Account No. 50-3157. No additional fees are believed to be necessary. If, however, any additional fees are required, I authorize the Commissioner to charge these fees which may be required to Yee & Associates Deposit Account No. 50-3157. No extension of time is believed to be necessary. If, however, an extension of time is required, the extension is requested, and I authorize the Commissioner to charge any fees for this extension to Yee & Associates Deposit Account No. 50-3157.

REAL PARTY IN INTEREST

The real party in interest in this appeal is the following party: Deere & Company of Moline, Illinois.

RELATED APPEALS AND INTERFERENCES

This appeal has no related proceedings or interferences.

STATUS OF CLAIMS

A. TOTAL NUMBER OF CLAIMS IN APPLICATION

The claims in the application are: 1-29

B. STATUS OF ALL THE CLAIMS IN APPLICATION

Claims canceled: None

Claims withdrawn from consideration but not canceled: None

Claims pending: 1-29

Claims allowed: None

Claims rejected: 1-29

Claims objected to: None

C. CLAIMS ON APPEAL

The claims on appeal are: 1-29

STATUS OF AMENDMENTS

A Response to Final Office Action, without claim amendment, was filed by Appellant on December 18, 2009. In an Advisory Action dated January 14, 2010, the Examiner stated the arguments have been considered but have not placed the application in condition for allowance.

SUMMARY OF CLAIMED SUBJECT MATTER

A. CLAIM 1 - INDEPENDENT

The subject matter of claim 1 is directed to a data processing system implemented method for locating harvested material (Specification page 1, paragraph 4, line 1; Figure 6, all elements). The method comprises receiving, by the data processing system, material data including material location data on a material location of unloaded harvested material within a work area (Specification page 1, paragraph 4, lines 1-3; page 12, paragraph 53, lines 1-5; Figure 6, element S200), wherein the unloaded harvested material is unloaded from a harvester that harvested the harvested material (Specification page 8, paragraph 34, lines 1-4; Figure 3, element 206). The method comprises obtaining, by the data processing system, background data on at least one established transportation path within the work area (Specification page 1, paragraph 4, lines 3-4; page 4, paragraph 22, lines 1-14; page 10, paragraph 43, lines 1-14; page 12, paragraph 55, lines 1-9; Figure 6, element S204; Figure 4, element S102; Figure 6, element S204). The method comprises determining, by the data processing system, a forwarder location of a forwarder (Specification page 12, paragraph 54, lines 1-4; Figure 6, element S202). The method comprises estimating, by the data processing system, economic cost factors associated with corresponding candidate paths or segments of candidate paths between the forwarder location and the material location (Specification page 1, paragraph 4, lines 5-7; page 13, paragraph 57, lines 1-12; Figure 6, element S208). The method comprises selecting, by the data processing system, a preferential path plan between the forwarder location and the material location consistent with the background data and minimization of the economic cost factors (Specification page 1, paragraph 4, lines 7-9; page 13, paragraph 57, lines 1-4; page 17, paragraphs 75-82; Figure 6, element S208), wherein the material location of the unloaded harvested material is a different location than the forwarder location of the forwarder (Specification page 8, paragraph 36, lines 1-5; Figure 3, elements 206 and 312).

B. CLAIM 10 - INDEPENDENT

The subject matter of claim 10 is directed to a data processing system implemented method for locating harvested material (Specification page 1, paragraph 4, line 1; Figure 6, all elements). The method comprises collecting, by the data processing system, material data

including at least one of material location data, a material identifier, a material attribute, and a material attribute value (Specification page 3, paragraph 20, lines 1-3; page 9, paragraph 41, lines 1-7; Figure 4, element S100), wherein the material location data, the material identifier, the material attribute, and the material attribute value are each associated with the harvested material (Specification page 3, paragraph 21, lines 1-3; page 9, paragraph 42, line 1-3). The method comprises obtaining, by the data processing system, background data for the work area (Specification page 4, paragraph 22, lines 1-14; page 10, paragraph 43, lines 1-2; Figure 4, element S102). The method comprises storing, by the data processing system, the collected material data and the obtained background data (Specification page 4, paragraph 23, lines 1-3; page 10, paragraph 46, lines 1-2; Figure 1, element 106; Figure 4, element S106). The method comprises making available the stored data to a forwarder (Specification page 4, paragraph 23, lines 3-5; page 11, paragraph 1-4; Figure 4, element S108). The method comprises receiving the stored data via an electromagnetic signal (Specification page 1, paragraph 4, lines 1-3; page 4, paragraph 23, lines 5-8; page 12, paragraph 53, lines 1-5; Figure 1, element 110 of forwarder electronics 112; Figure 6, element S200). The method comprises determining a forwarder location of the forwarder in the work area (Specification page 12, paragraph 54, lines 1-4; Figure 6, element S202). The method comprises identifying a preferential path plan with an efficient path cost between the forwarder location and a material location and between the material location and the drop-off destination based on the stored data, including the material data and the background data, and based on cost factor data (Specification page 13, paragraph 57, lines 1-12; Figure 6, element S208), wherein the material location is a location of the harvested material unloaded from a harvester that harvested the harvested material (Specification page 8, paragraph 34, lines 1-4; Figure 3, element 206).

C. CLAIM 14 - INDEPENDENT

The subject matter of claim 14 is directed to a data processing system implemented method for facilitating locating harvested material (Specification page 1, paragraph 4, line 1; Figure 6, all elements). The method comprises collecting, by the data processing system, material data including at least two of material location data, a material identifier, a material attribute, and a material attribute value (Specification page 3, paragraph 20, lines 1-3; page 9, paragraph 41, lines 1-7; Figure 4, element S100), wherein the material location data, the material

identifier, the material attribute, and the material attribute value are each associated with the harvested material (Specification page 3, paragraph 21, lines 1-3; page 9, paragraph 42, line 1-3), and wherein the harvested material is material that has been unloaded from a harvester that harvested the material (Specification page). The method comprises marking the harvested material with a marker for referencing the collected material data, wherein the marker is at least one of a bar code, a uniform product code (UPC), an optical code, a radio frequency identification tag, an optical tag, and a tag (Specification page 6, paragraph 29, lines 1-10), and the marker is usable to locate the harvested material that has been unloaded from the harvester (Specification page 6, paragraph 28, lines 1-6, paragraph 29, lines 1-10 and paragraph 30, lines 1-10; Figure 2, elements 202, 206, 214 and 101).

D. CLAIM 23 - INDEPENDENT

The subject matter of claim 23 is directed to a system for locating harvested material in a work area (Specification page 1, paragraph 4, line 1; Figure 6, all elements). The system comprises a harvested material attribute sensor for collecting material data including at least two of material location data, a material identifier, a material attribute, and a material attribute value (Specification page 3, paragraph 20, lines 1-3; page 9, paragraph 41, lines 1-7; Figure 1, element 104; Figure 4, element S100), wherein the material location data, the material identifier, the material attribute, and the material attribute value are each associated with the harvested material (Specification page 3, paragraph 21, lines 1-3; page 9, paragraph 42, line 1-3). The system comprises a navigational/environmental sensor for obtaining background data for the work area (Specification page 4, paragraph 22, lines 1-14; page 10, paragraph 43, lines 1-2; Figure 1, element 108; Figure 4, element S102). The system comprises a storage device for storing the collected material data and the obtained background data (Specification page 4, paragraph 23, lines 1-3; page 10, paragraph 46, lines 1-2; Figure 1, element 106; Figure 4, element S106). The system comprises a wireless communications device for making available the stored data to a forwarder (Specification page 1, paragraph 4, lines 1-3; page 4, paragraph 23, lines 5-8; page 12, paragraph 53, lines 1-5; Figure 1, element 110 of forwarder electronics 112; Figure 6, element S200), wherein the material location data indicates a material location of harvested material unloaded from a harvester that harvested the harvested material (Specification page 8, paragraph 34, lines 1-4; Figure 3, element 206).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to review on appeal are as follows:

A. GROUND OF REJECTION 1

The rejection of Claims 1-7, 10-13 and 16-18 under 35 U.S.C. § 103(a) as being obvious over Motz (WO 00/35265) in view of Hayami et al.(U.S. Patent 5,369,588), further in view of Mueller et al. (U.S. Patent No. 4,950,118);

B. GROUND OF REJECTION 2

The rejection of Claims 8 and 9 under 35 U.S.C. § 103(a) as being obvious over Motz (WO 00/35265) in view of Hayami et al.(U.S. Patent 5,369,588) as applied to Claim 1 above, and further in view of Mueller et al. (U.S. Patent No. 4,950,118), further in view of Weigelt et al. (U.S. Patent 5,712,782);

C. GROUND OF REJECTION 3

The rejection of Claims 14, 15, 23 and 29 under 35 U.S.C. § 103(a) as being obvious over Motz (WO 00/35265) in view of Mueller et al. (U.S. Patent No. 4,950,118); and

D. GROUND OF REJECTION 4

The rejection of Claims 19-22 and 24-28 under 35 U.S.C. § 103(a) as being obvious over Motz (WO 00/35265) in view of Mueller et al. (U.S. Patent No. 4,950,118), further in view of Hayami et al.(U.S. Patent 5,369,588).

ARGUMENT

A. GROUND OF REJECTION 1 (Claims 1-7, 10-13 and 16-18)

Claims 1-7, 10-13 and 16-18 stand rejected under 35 U.S.C. § 103(a) as being obvious over Motz (WO 00/35265), hereinafter "Motz" in view of Hayami et al.(U.S. Patent 5,369,588), hereinafter "Hayami" further in view of Mueller et al. (U.S. Patent No. 4,950,118), hereinafter "Mueller".

The Examiner bears the burden of establishing a prima facie case of obviousness based on prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Only if that burden is met, does the burden of coming forward with evidence or argument shift to the applicant. *Id.* All words in a claim must be considered in judging the patentability of that claim against the prior art." MPEP 2143.03; *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If the examiner fails to establish a prima facie case, the rejection is improper and will be overturned. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In the absence of a proper *prima facie* case of obviousness, an applicant who complies with the other statutory requirements is entitled to a patent. *See In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

With respect to the rejection of Claim 1, the primary issue is whether the Examiner has properly established prima facie obviousness. A secondary issue is whether the Examiner has used impermissible hindsight analysis in piecing the various cited references' teachings together.

1. *Claims 1 and 5*

(i) Prima facie obviousness

Per Claim 1, *a plurality of candidate paths between a material location and a forwarder location* are used in performing an economic cost fact estimation that is used in selecting a preferential *path between the material location and forwarder location.* The Examiner cites Motz as teaching selecting a preferential path plan between a material location (since the material is on the harvester, whose position is known) and a forwarder location consistent with background data and *minimizing economic cost* since it describes (1) determining a plurality of conditions for directing the operation of the second agricultural machine to travel to an expected

location of where the harvester is expected to be at an expected time, and (2) the plurality of conditions include (i) a desired start time for the forwarder to begin its travel to the expected location, and (ii) a desired speed of the forwarder. The Examiner opines that the economic cost minimization is described as being a part of the selected path since the goal is to minimize economic cost so that the harvester does not have to sit idle and can continue to gather more material. While this overall goal may exist, it is accomplished by 'timing' the forwarder to meet the harvester when the harvester's load is full – *and not by* 'path selection' using a plurality of candidate paths. Instead, Motz selects a path using different criteria – specifically, a path is located *in an area already harvested* so as to not disturb unharvested crops (which therefore does not necessarily minimize economic costs). Thus, the cost-minimization goal is accomplished by different means.

Specifically with respect to Claim 1, such claim recites "selecting, by the data processing system, a preferential path plan between the forwarder location and the material location consistent with the background data and minimization of the economic cost factors", where such 'material location' that this preferential path plan pertains to is a material location of *unloaded harvested material* within a work area, wherein the unloaded harvested material is unloaded from a harvester that harvested the harvested material. Motz does not teach a path selection that pertains to unloaded harvested material, and therefore does not describe any *selection of a path plan for minimization of economic cost factors* – where such economic cost factors are estimated economic cost factors associated with corresponding candidate paths/path segments between the forward location *and the material location of the unloaded harvested material.*

In the Examiner Advisory Action dated January 14, 2010, the Examiner states - in rebuttal to this described distinction – that "Clearly an economic cost factor is minimized in Motz". Appellant urges that even assuming such assertion to be true, it still does not establish prima facie obviousness with respect to a '*path plan selection*' being used to accomplish such economic cost factor minimization. Instead, 'timing' is used to accomplish economic cost factor.

As to the cited Mueller reference that is alleged to teach material location data on a *material location of unloaded harvested material* within a work area, *where the unloaded harvested material is unloaded from a harvester that harvested the harvested material*, this reference describes a fixed sensor on a conveyor belt that senses 'when' an object on the conveyor belt passes by (col. 3, line 67 – col. 4, line 34). The resulting ON/OFF switch signal

does not provide any meaningful location information that can be used in path selection or economic analysis as the object is moving down a conveyor belt when this switch is activated, and continues moving down the conveyor belt after being activated so the ON/OFF signal – when detected – no longer provides location information for the object as it is a moving object. Even assuming a location calculation were made when the switch is toggled, any resulting location information would be invalid as the object is a moving object, and thus the object is no longer at this detected location – therefore a person of ordinary skill in the art would not have been motivated to use this ON/OFF switch signal detection in a path selection determination or an economic analysis pertaining to a material location since such calculation would not be based on the location of the object during such calculation (due to the object having already moved on down the conveyor belt). Importantly, any resulting path that would be calculated would be *a path to the fixedly mounted sensor's location*, and not a path to the actual material location.

In addition, Motz *requires* that the material be in the first machine when performing the alleged path determination between the forwarder location and the material location (Motz page 8, line 29 – page 9, line 4). In other words, the material location must be with respect to 'loaded' material when Motz performs this path determination, so a person of ordinary skill in the art would not have been motivated to modify Motz' requirement of having the material 'loaded' to instead have the material be 'unloaded' material when performing path selection.

Thus, (1) the resulting combination does not teach or suggest the claimed 'selecting' preferential path plan between a forwarder location and a material location, and (2) a person of ordinary skill in the art would not have been motivated to combine Motz with Mueller since (i) Motz requires that the material be 'loaded' material when selecting a path between the forwarder and the material location, and (ii) any resulting path calculated using the Mueller ON/OFF switch signal would generate a path to the actual sensor itself, and not a path to unloaded material.

In addition, there would be no reason to use this Mueller sensor data in selecting a path since the sensor is fixed and therefore is always in the same location - so such path selection associated with such fixed sensor would not be needed.

In the Examiner Advisory Action dated January 14, 2010, the Examiner states - in rebuttal to this described distinction – that "If there are more then (sic) one location in which to pick up the loads, a path plan is in fact needed to determine how to get to the various locations

when it is time to pick up the material". Appellant urges that this is pure speculation and conjecture on the part of the Examiner, as neither reference describes this scenario. Indeed, due to Motz' keen desire to time the 'time of pickup' with 'when' a 'full' condition is attained, such multi-location drop-off would defeat the very critical timing objectives that Motz is keen on providing – further evidencing no motivation to modify the teachings of the cited references in accordance with the missing claimed features identified hereinabove with respect to a plurality of 'candidate paths' being used in an economic analysis.

(ii) Impermissible Hindsight

It is further urged that Claim 1 has been erroneously rejected using impermissible hindsight analysis. Motz' key feature is 'timing', where the forwarder is able to meet the harvester at the exact location and time of where the harvester will be when it has a full load. There would have been no reason or other motivation to modify Motz according to the teachings of Mueller, which is alleged to teach determining a location for unloaded harvested material, as Motz has a strong desire *to not unload material at a location that a forwarder needs to locate*, due to the desire for the two pieces of machinery to 'sync-up' with one another at the exact time a full load is achieved. Thus, the only reason for eviscerating the underlying objects/goals of Motz with such awkward modification must be coming from use of the current claims themselves, which is impermissible hindsight analysis. [1]

Even when making such impermissible hindsight rejection, there are still missing claimed elements (material location data on a *material location of* ***harvested*** *material that is* ***unloaded*** *within a work area, where the unloaded harvested material is unloaded from a harvester that harvested the harvested material*) – strongly evidencing non-obviousness of Claim 1.

[1] It is error to reconstruct the patentee's claimed invention from the prior art by using the patentee's claims as a "blueprint". When prior art references require selective combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight obtained from the invention itself. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 227 USPQ 543 (Fed. Cir. 1985).

2. *Claim 2*

Appellant initially urges error in the rejection of Claim 2 for reasons given above with respect to Claim 1 (of which Claim 2 depends upon).

Further with respect to Claim 2, such claim recites "establishing a drop-off location for the unloaded harvested material; determining a path plan between the material location and the drop-off location". As can be seen, a drop-off location for the unloaded harvested material is established. In addition, a path plan between (1) the material location (of the *unloaded harvested* material that is unloaded from a harvester that harvested the harvested material) and (2) the drop-off location is determined.

In rejecting the path determining aspect of Claim 2, the Examiner cites Motz description at page 10, line 22 – page 11, line 22, since this passage is alleged to teach that a path plan is determined from the harvester to the truck and the second agriculture machine travels along the desired path. Appellant urges that the path from the harvester to the truck does not teach or suggest a path plan between the material location of the *unloaded* ***harvested*** material and the drop-off location is determined, as claimed, since in this instance the material is *still loaded in the harvester*. Thus, it is further urged that Claim 2 has been erroneously rejected due to this additional prima facie obviousness deficiency.

3. *Claim 3*

Appellant initially urges error in the rejection of Claim 3 for reasons given above with respect to Claim 1 (of which Claim 3 depends upon).

Further with respect to Claim 3, such claim recites "wherein the path plan comprises a shortest possible path that traverses at least one of a harvested area, an unharvested area, and a transportation path associated with the work area". As can be seen, per Claim 3 the path plan comprises a 'shortest possible path' associated with the work area.

The Examiner alleges that all aspects of Claim 3 are described by Motz page 8, line 29 – page 9, line 14, since there Motz is alleged to describe a path that is chosen to go through the *already harvested area* so the crops that have yet to be harvested are not disturbed. Appellant urges that a path going through a disturbed area in lieu of an undisturbed area does not teach or suggest a path or path plan for a *shortest possible path* – instead describing a path through a 'disturbed' area which is not described as being the shortest possible path. Thus, it is further

urged that Claim 3 has been erroneously rejected due to this additional prima facie obviousness deficiency.

In the Examiner Advisory Action dated January 14, 2010, the Examiner states - in rebuttal to this described distinction – that "Since the path plan discloses a desired path in a desired time it is obvious that the machine takes the shortest path to reach the target on time". Appellant urges that a plan that discloses a 'desired' path in a 'desired' time clearly is not that same as a 'shortest path'. By analogy, assume a family on a summer vacation car trip is traveling from Phoenix to Denver. They 'desire' to visit the Grand Canyon during this trip, and they 'desire' to spend no more than one (1) day on such side-excursion. So instead of choosing the 'shortest path' between Phoenix and Denver, they choose a 'longer path' that takes them to their 'desired' Grand Canyon side-excursion for a 'desired' amount of time. As can be seen, a 'desired' path and a 'desired' time has no bearing on a 'shortest path', as erroneous alleged by the Examiner – further evidencing that Claim 3 has been erroneously rejected.

4. ***Claim 4***

Appellant initially urges error in the rejection of Claim 4 for reasons given above with respect to Claim 3 (of which Claim 4 depends upon).

Further with respect to Claim 4, such claim recites "receiving harvester data including harvester location data on a harvester location of a harvester within the work area, wherein the material location of the unloaded harvested material is a different location than the harvester location of the harvester, and wherein the material location and the harvested area is updated on a regular basis". As can be seen, *both* the material location *as well as* the harvested area is updated on a regular basis.

The Examiner alleges that Motz teaches all aspects of the regular-basis-update at page 6, line 19 – page 7, line 2 – and yet Motz does not teach or suggest any 'material location' for unloaded harvested material, as per Claim 4 in combination with Claim 1. Thus, Motz cannot teach any regular basis updating of a *material location of unloaded harvested material.* Nor does Muellar overcome such teaching/suggestion deficiency, since Muellar describes use of fixed sensors in detecting the alleged 'material location of unloaded harvested material', and these sensors detect when an object passes by, which is *random* in time – thus prompting the need for such sensors – and therefore such sensor detection of items is not described as being performed

on a regular basis. Thus, it is further urged that Claim 4 has been erroneously rejected as the resulting combination does not teach or suggest a regular basis updating with respect to an unloaded harvested material location, as claimed.

In the Examiner Advisory Action dated January 14, 2010, the Examiner states - in rebuttal to this described distinction – that:

> "the Examiner considers real-time to be on a regular basis".

Appellant urges clear error in such assertion. The words of the claim must be given their **plain meaning** unless the plain meaning is inconsistent with the specification. *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) (discussed below); *Chef America, Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1372, 69 USPQ2d 1857 (Fed. Cir. 2004) (Ordinary, simple English words whose meaning is clear and unquestionable, absent any indication that their use in a particular context changes their meaning, are **construed to mean exactly what they say**.) MPEP 2111.01(I) (emphasis added by Appellant). The Examiner is not interpreting the claim terms in accordance with their normal, plain meaning. For example:

> **real time** (Source: http://www.webopedia.com/TERM/R/real_time.html)
>
> Occurring immediately. The term is used to describe a number of different computer features. For example, real-time operating systems are systems that respond to input immediately. They are used for such tasks as navigation, in which the computer must react to a steady flow of new information without interruption. Most general-purpose operating systems are not real-time because they can take a few seconds, or even minutes, to react.
> *Real time* can also refer to events simulated by a computer at the same speed that they would occur in real life. In graphics animation, for example, a real-time program would display objects moving across the screen at the same speed that they would actually move.
>
> **regular** (Source: http://dictionary.reference.com/browse/regular)
>
> Characterized by fixed principle; uniform procedure, etc.: *regular income*
> recurring at fixed times; periodic: *regular bus departures; regular meals*
> rhythmical: *regular breathing*
> adhering to a rule or procedure; methodical: *regular habits*
> observing fixed times or regular habits; habitual: *a regular customer*

As can be seen, the terms 'real time' and 'regular' mean very different things. Therefore, the Examiner's assertion that "the Examiner considers real-time to be on a regular basis" is clearly erroneous as the Examiner is not interpreting the claim terms in accordance with their normal, plain meaning. *In re Zletz, supra.* – further evidencing that Claim 5 has been erroneously rejected.

5. *Claim 6*

Appellant initially urges error in the rejection of Claim 6 for reasons given above with respect to Claim 1 (of which Claim 6 depends upon).

Further with respect to Claim 6, such claim recites "wherein the material location is updated after the addition of a new material location". The Examiner alleges that Motz teaches all aspects of Claim 6, and yet Motz does not describe the claimed material location since such material location is defined in the claims to be a material location of ***unloaded*** harvested material. The cited Motz passage at page 6, line 11 – page 7, line 2 does not describe any type of location information that pertains to a material location of ***unloaded*** harvested material. Instead, it describes position data for 'machines' (Motz page 5, lines 21-29). In addition, this position data with respect to machines is not described as being updated *after the addition of a new material location*. Thus, it is further urged that Claim 6 has been erroneously rejected due to such additional prima facie obviousness deficiency.

6. *Claim 7*

Appellant initially urges error in the rejection of Claim 7 for reasons given above with respect to Claim 1 (of which Claim 7 depends upon).

Further with respect to Claim 7, such claim recites "wherein the background data comprises transient data associated with at least one of a time-dependent location of a machine in the work area, a time-dependent location of a person within the work area, and a time-dependent definition of a harvested area associated with the work area, and wherein both the background data and the material data are specified by a user using a user interface of the data processing system". As can be seen, both the background data and the material data are **user-specified** using a user interface.

The Examiner alleges that all aspects of Claim 7 are described by Motz since Motz is

alleged to teach a user interface to *display* various conditions. Appellant urges that a 'display' of various conditions does not teach or suggest **user specification** of both the background data and the material data, as claimed. Importantly, this operator display is only described as having an ability to 'display' information, and is not described as having any ability for a user to 'specify' information using such display (Motz page 10, lines 1-9). Thus, it is further urged that Claim 7 has been erroneously rejected due to such additional prima facie obviousness deficiency.

7. *Claims 10, 12 and 16-18*

With respect to independent Claim 10, such claim includes the material location characteristics of Claim 1 that pertain to *unloaded* ***harvested*** *material*, and which is used in *identifying a preferential path plan* between the forwarder location and the material location AND between the material location and the drop-off destination. Therefore, similar errors exist for the rejection of Claim 10 as described hereinabove with respect to Claim 1. For example, Motz path is selected to be in an area *already harvested so as to not disturb unharvested crops* (which therefore does not necessarily minimize economic costs). In addition, such path selection in an area 'already harvested' *does not take into account a material location of unloaded harvested material,* as claimed. Per Claim 10 – "**identifying a preferential path plan** with an efficient path cost between the forwarder location and a **material location** and between the **material location** and the drop-off destination based on the stored data, including the material data and the background data, and based on cost factor data, wherein the **material location** is a **location of the harvested material unloaded from a harvester** that harvested the harvested material". Thus, it is urged that Claim 10 has been erroneously rejected due to this prima facie obviousness deficiency.

Still further, per Claim 10, a preferential path plan is identified (1) between (i) the forwarder location and (ii) the material location, as well as (2) between (i) the material location and (ii) the drop-off destination based on the stored data that includes both the material data and the background data (where the 'material location' is explicitly defined in the claim to be "a **location of the harvested material unloaded from a harvester** that harvested the harvested material"). The cited Motz passage at page 8, line 6 – page 9, line 14 describes "determining a plurality of conditions for directing the operation of the machine 150 to travel to the 'expected location' at the 'expected time' that were determined. These 'plurality of conditions' that are

determined for the travel direction are (i) a desired start time for the second machine to travel to the expected location of the first machine, and (ii) a desired speed of the second machine. This path is not described as being any type of path between (i) a forward location and (ii) a location of ***unloaded*** *harvested material.*

As to the remaining cited passage at page 11, lines 11-15, this cited passage describes that the second machine travels along a 'desired path' to a truck after the harvested material has been transferred to a grain cart. This cited passage does not describe 'how' this 'desired path' is determined, and therefore does not describe that this 'desired path' is identified based on both (1) the material data and (2) the background data, as claimed.

Nor does this 'desired path' describe any type of preferential path plan identification being made between the 'forwarder location' and the 'material location' since the 'material' is loaded in the 'forwarder' in this scenario (Figure 3, elements 150 and 160), and therefore there is no type of preferential path plan needed between them (Figure 3, elements 150 and 160). Thus, it is further urged that Claim 10 has been erroneously rejected due to this prima facie obviousness deficiency.

It is further noted that the 'path' between elements 150 (the forwarder) and 160 (the material in the cart) is fixed, as it is a fixed hitch connection. Therefore, a person of ordinary skill in the art would not have been motivated to modify the teachings of Motz to determine a path between elements 150 and 160 based on both (1) stored data that includes material data and background data, and (2) cost factor data – if for no other reason than this path is fixed, so there would have been no reason to include such factors in such a path identification – further evidencing that Claim 10 is non-obvious in view of the cited references.

8. *Claim 11*

Appellant initially urges error in the rejection of Claim 11 for reasons given above with respect to Claim 10 (of which Claim 11 depends upon).

Further with respect to Claim 11, such claim recites "wherein the collected material data is stored in response to unloading the harvested material from the harvester". As can be seen, the collected material data is stored, and such storing occurs *in response to* unloading the harvested material from the harvester.

The Examiner alleges that Mueller teaches "that the collected material data is stored in

response to unloading the harvested material from the harvester (Col. 3, line 35 through Col. 4, line 34)" – see the middle of page 12 of the Final Office Action dated October 29, 2009). Yet, Mueller does not teach or suggest *either* (i) harvested material, *or* (ii) a harvester – and therefore Mueller cannot teach that the collected material data is stored *in response to unloading the* ***harvested material*** *from the* ***harvester***, as erroneously alleged by the Examiner in rejecting such claim. Thus, it is further urged that Claim 11 has been erroneously rejected due to this additional prima facie obviousness deficiency.

9. ***Claim 13***

Appellant initially urges error in the rejection of Claim 13 for reasons given above with respect to Claim 10 (of which Claim 13 depends upon).

Further with respect to Claim 13, such claim recites "wherein the obtaining background data comprises (i) obtaining static data and transient data as the background data, wherein the static data remains generally constant over a greater sample period and wherein the transient data tends to vary over the greater sample period, and (ii) providing a user interface that allows a user to override the background data that is obtained". As can be seen, a user interface is provided that allows a user to override the background data that is obtained.

The Examiner alleges that all aspects of Claim 13 are described by Motz since Motz describes that while the system is automatic, it allows for manual override by the operator. Appellant shows that the cited Motz passage at page 9, lines 15-30 per the rejection of Claim 13 states:

> "However, the second agricultural machine 150 may also be operated manually by an operator, or semi-autonomously."

Appellant urges that a generalized description that a user can manually 'operate' a machine does not teach or suggest specific features pertaining to *providing a user interface that allows a user to override the* ***background*** *data that is obtained*, as claimed.[2] The only reasonable inference that can be made with respect to the cited passage is that the user is able to 'operate' the machinery. Thus, it is further urged that Claim 13 has been erroneously rejected due to this

[2] **All** words in a claim **must be** considered in judging the patentability of that claim against the prior art." MPEP 2143.03; *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

additional prima facie obviousness deficiency.

B. GROUND OF REJECTION 2 (Claims 8 and 9)

Claims 8 and 9 stand rejected under 35 U.S.C. § 103(a) as being obvious over Motz in view of Hayami as applied to claim 1 above, and further in view of Mueller, further in view of Weigelt et al. (U.S. Patent 5,712,782), hereinafter "Weigelt".

1. *Claims 8 and 9*

Appellant initially urges error in the rejection of Claims 8 and 9 for similar reasons to those given above with respect to Claim 1 (of which Claims 8 and 9 depend upon), as the newly cited reference to Weigelt does not overcome either the prima facie obviousness deficiencies or the impermissible hindsight analysis issues previously identified with respect to such claim.

Further, Claims 8 and 9 are directed to details pertaining to the *path plan selection* ("wherein **selecting a preferential path plan** further comprises **considering** environmental factors to reduce soil compaction from the forwarder"; "wherein **selecting a preferential path plan** further comprises **considering** vehicle dynamic constraints related to the handling and maneuvering capabilities of the forwarder that is transporting a certain corresponding level of a load of the harvested material"). It is urged that the combined teachings do not teach or suggest the 'considering' aspect of Claims 8 and 9. For example, one reference is alleged to teach a path plan selection and another reference is alleged to teach environmental factors/vehicle constraints. However, the resulting combination does not teach or suggest the synergistic interplay that is provided by the claimed terminology of 'considering' that links these two claimed aspects together in a synergistic fashion. By analogy, one reference may describe how a computer program such as Mapquest selects a path of travel using pre-existing roadways. Another reference may describe satellite imagery data. The resulting combination would not teach or suggest selecting a path of travel 'considering' satellite imagery data – instead the resulting combination would describe (1) selecting a path of travel, and (2) the existence of satellite imagery. There is no synergistic interplay between these described features (1) and (2). Similarly, the resulting combination of the cited references does not teach or suggest the synergistic interplay between path plan selection and environmental factors/vehicle constraints (by the claimed 'considering' aspect of Claims 8 and 9). Therefore, when the references are

considered as a whole there are still prima facie obviousness deficiencies with respect to Claims 8 and 9.

C. GROUND OF REJECTION 3 (Claims 14, 15, 23 and 29)

Claims 14, 15, 23 and 29 stand rejected under 35 U.S.C. § 103(a) as being obvious over Motz in view of Mueller.

1. *Claim 14*

As to Claim 14, such claim is directed to 'marking' of unloaded material 'with a marker' for referencing the collected material data ("marking the harvested material with a marker for referencing the collected material data, wherein the marker is at least one of a bar code, a uniform product code (UPC), an optical code, a radio frequency identification tag, an optical tag, and a tag, and the marker is usable to locate the harvested material that has been unloaded from the harvester").

The Examiner cites Motz' description at page 6, line 11 – page 7, line 10 as teaching such marking step. Appellant urges that this cited passage describes (1) a database having geographic information of field characteristics (areas already harvested, obstacles in the field, field boundaries), (2) position data for two machines (the alleged harvester and the alleged forwarder), and (3) a volume indication subsystem that indicates the volume of harvested material in a bin (depth detection). None of these activities are a 'marking' action associated with *harvested material that is marked with a marker*, whereas Claim 14 explicitly recites "marking the harvested material with a marker for referencing the collected material data, wherein the marker is at least one of a bar code, a uniform product code (UPC), an optical code, a radio frequency identification tag, an optical tag, and a tag, and *the marker is usable to locate the harvested material that has been unloaded from the harvester*".

The Examiner also cites Mueller's teachings col. 3, line 35- col. 4, line 34 as describing a 'marker', as this cited passage is alleged to describe an ability to 'locate' material via an optical sensor. However, this optical sensor is fixedly mounted to a conveyor to detect an object passing by. The Mueller 'object' that this sensor is allegedly used to locate the position of is not described as being specially 'marked', as per Claim 14 ("*marking the harvested material* with a marker"). In addition, this Mueller object is also not harvested material that has been unloaded

from the harvester, whereas per Claim 14 harvested material that has been unloaded from a harvester is marked with a marker. Thus, it is urged that Claim 14 (and dependent Claim 15) has been erroneously rejected under 35 U.S.C. § 103(a).

In the Examiner Advisory Action dated January 14, 2010, the Examiner states - in rebuttal to this described distinction – that "The cited activities include the position of the material which is effectively marking the position of the material the second reference Mueller was used to show the type of marking being optical". This analysis fails to take into account that the harvested material is marked 'with a marker'. This analysis also fails to take into account that the Mueller optical tag is not described as marking material 'with a marker'. For example:

> **marking (Source: http://www.thefreedictionary.com/marking)**
> **1.**
> **a.** A making or giving of a **mark**.
>
> **mark (Source: http://www.thefreedictionary.com/mark)**
> **1.** A visible trace or impression, such as a line or spot.
> **2.** A sign, such as a cross, made in lieu of a signature.
> **3.** A written or printed symbol used for punctuation; a punctuation mark.

As can be seen, the normal meaning of 'marking' is the making or giving of a 'mark', where such 'mark' is tangible. In contrast, the alleged 'marking' described by Mueller describes an optical sensor that is used to 'detect the presence of a load' (Mueller col. 3, line 67 – col. 4, line 1) – however, this load is not itself 'marked', whereas per Claim 14 there is a marking of the 'harvested material'. The Examiner is not interpreting the claimed language in accordance with its normal meaning in rejecting such claim – further evidencing that such claim has been erroneously rejected.

2. ***Claim 15***

Appellant initially urges error in the rejection of Claim 15 for reasons given above with respect to Claim 14 (of which Claim 15 depends upon).

Further with respect to Claim 15, such claim recites "The method according to claim 14, further comprising reading the marker associated with the harvested material by a forwarder that includes forwarder electronics". As can be seen, Claim 15 is directed to an additional step over and above what is recited in Claim 14. In particular, the marker that the harvested material was marked with per Claim 14 is 'read' by a 'forwarder' that includes forwarder electronics.

The Examiner alleges that Mueller teaches all aspects of Claim 15 at col. 3, line 35 – col. 4, line 34 since there is describes that 'optical sensors a AGV can read that there is a load' (sic). Curiously, this 'reading' by an optical sensor is the identical aspect of Mueller that is recited in rejection the 'marking' step of Claim 14 (of which Claim 15 depends upon). Appellant urges that the reading of a load by an optical sensor does not teach two distinct steps of 'marking' and 'reading' as is recited by Claim 15 in combination with Claim 14. Thus, it is further urged that Claim 15 has been erroneously rejected by the Examiner's allegation that a single 'reading' step teaches BOTH a 'marking' step and a 'reading' of a marker that was marked by a 'marking' step. For example, such 'reading' step does not read anything *resulting from* the same reading step, whereas per Claim 15 in combination with Claim 14 the 'reading' step reads something *resulting from* the 'marking' step (specifically, the 'marker' resulting from the 'marking' step is read). These Mueller sensors merely provide an ON/OFF indicator which indicates 'when' an object breaks a light-beam (col. 4, lines 24-25), and provide no ability to read something that they themselves mark with a marker. Thus, it is further urged that Claim 15 has been erroneously rejected.

Still further with respect to Claim 15, none of the cited references teach or suggest that the 'reading' of the marker – which is a direct result of the 'marking' step – is performed by a forwarder. The Examiner erroneously alleges that Mueller teaches this aspect of Claim 15 by 'AGV can read that there is a load', when in fact the optical sensors are 'installed on each of the conveyors' (Mueller col. 2, lines 67-68). Thus, it is further urged that Claim 15 has been erroneously rejected as none of the cited references teach or suggest the claimed feature of reading the marker associated with the harvested material *by a forwarder* that includes forwarder electronics.

3. *Claim 23*

Claim 23 recites "wherein the material location data indicates a material location of harvested material unloaded from a harvester that harvested the harvested material".

In rejecting this aspect of Claim 23, the Examiner cites Mueller description of optical sensors that are able to 'sense' or 'detect' a load. Appellant urges that these sensors merely provide an ON/OFF indicator which indicates 'when' an object breaks a light-beam (col. 4, lines 24-25), but such ON/OFF indicator does not provide any 'data' pertaining to 'where' the

harvested material actually is (an ON/OFF signal or a 1/0 signal has no location data), and therefore cannot describe material location **data indicates a material location** of harvested material unloaded from a harvester that harvested the harvested material, as claimed. Thus, it is urged that Claim 23 has been erroneously rejected due to this prima facie obviousness deficiency.

4. ***Claim 29***

Appellant initially urges error in the rejection of Claim 29 for reasons given above with respect to Claim 23 (of which Claim 29 depends upon).

Further with respect to Claim 29, such claim recites "a central processor determining the preferential path plan from the collected material data and background data collected by one or more harvesters and sending the determined preferential path plan to a plurality of forwarders operating in the work area". As can be seen, per Claim 29, there is a central processor that both (1) determines the preferential path plan from (i) collected material data and (ii) background data, and (2) sends such determined preferential path plan to a *plurality* of forwarders operating in the work area.

In rejecting Claim 29, the Examiner alleges that Motz teaches all aspects of such claim. As to the 'sending' step that pertains to sending the preferential path plan to a plurality of forwarders operating in the work area, the Examiner alleges that this is taught by Motz at page 5, lines 6-20. Applicants show that there, Motz states:

> "While the following discussion refers to the first agricultural machine as a harvester 110 and the second harvester machine as tractor 150, it is to be realized that any number of **other *types*** of agricultural machines **may be *substituted***"

Appellant urges that 'substituting' one type of machine for another type of machine does not teach or suggest an active step of 'sending' the determined preferential path plan to a 'plurality of forwarders' operating in the work area, as claimed. [3] Thus, it is further urged that Claim 29 has been erroneously rejected due to this additional prima facie obviousness deficiency.

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[3] **Substitute**: One that takes the place of another; a **replacement**
(Source: http://www.thefreedictionary.com/substitute)

D. GROUND OF REJECTION 4 (Claims 19-22 and 24-28)

Claims 19-22 and 24-28 stand rejected under 35 U.S.C. § 103(a) as being obvious over Motz in view of Mueller, further in view of Hayami.

1. *Claims 19-22*

Appellant initially urges error in the rejection of Claim 19 (and dependent Claims 20-22) for similar reasons to those given above with respect to Claim 14 (of which Claim 19 depends upon), as the newly cited reference to Hayami does not overcome the teaching/suggestion deficiencies identified hereinabove with respect to such claim.

Further with respect to Claim 19, such claim recites "reading the marker for referencing the stored data; determining, in response to the reading of the marker, a forwarder location of a forwarder in the work area; identifying a preferential path plan with an efficient path cost between the forwarder location and a material location of the harvested material that has been unloaded from the harvester and between the material location and the drop-off destination based the stored data, including material data and background data, and based on cost factor data". As can be seen, Claim 19 includes reading the marker for referencing the stored data, and determining, *in response to the reading of the marker, a forwarder **location** of a forwarder in the work area is determined.*

The Examiner alleges that Motz teaches such marker characteristics at page 8, lines 6-19 since there is described an ability to read stored information, including various markers such as machine position data and site data which include field information. Appellant urges that such alleged 'various markers' are not equivalent to the claimed marker since they do not have the characteristics of the claimed marker, such as a marker (1) that is used for marking harvested material, referencing collected material data, and locating the harvested material that has been unloaded from the harvester, or (2) that is at least one of a bar code, a uniform product code (UPC), an optical code, a radio frequency identification tag, an optical tag, and a tag. Instead, Motz merely describes its marker as being machine position data or field information. Thus, it if further urged that Claim 19 (and dependent Claims 20-22) have been erroneously rejected due to these additional prima facie obviousness deficiencies.

To the extent that the Examiner is now relying on Mueller as teaching the claimed 'marker', such marker could not be used to locate a location of a forwarder in a work area as

such alleged marker merely provides an ON/OFF indicator which indicates 'when' an object breaks a light-beam (col. 4, lines 24-25). It is not possible to determine any type of forwarder location with a signal that indicates 'when' a device on a conveyor belt breaks a light beam. Thus, it is further urged that a person of ordinary skill in the art would not have been motivated to modify the teachings of Motz to include such ON/OFF timing characteristic to somehow locate a machine in a work area – if for no other reason than this alleged 'marker' does not provide any type of location information pertaining to forwarder's location, but instead provides an indication of the time that an object breaks a light beam.

2. ***Claim 24***

Appellant initially urges error in the rejection of Claim 24 for reasons given above with respect to Claim 23 (of which Claim 24 depends upon), as the newly cited reference to Hayami does not overcome the teaching/suggestion deficiencies identified hereinabove with respect to such claim.

Further with respect to Claim 24, such claim recites "a data processor for identifying a preferential path plan with an efficient path cost between the forwarder location and the material location of the harvested material unloaded from the harvester and between the material location and the drop-off destination based the stored data, including the material data and the background data, and based on cost factor data". As can be seen, per the features of Claim 24, a preferential path plan is identified (1) between (i) the forwarder location and (ii) the material location of the harvested material unloaded from the harvester and (2) between (i) the material location and (ii) the drop-off destination based the stored data – and that such identification is performed by a 'data processor'.

The Examiner alleges that Motz teaches this preferential path plan identification by a data processor since Motz (1) 'discloses that the desired path is determined from the forwarder to the material' (citing page 8, line 6 – page 9, line 14) and (2) 'discloses that upon getting the harvested material the second agricultural machine travels along the desired path to a truck which is the drop-off location' (citing page 11, lines 11-15). Appellant urges numerous errors in such rejection rationale, as will now be shown in detail.

First, such assertion does not establish any teaching a suggestion that the forwarder/material path and the material/truck path are identified by the *same data processor*

(per Claim 24, 'a data processor' performs both of these path identifications).

Second, this assertion does not establish any teaching or suggestion as to 'how' the desired path for the material/truck drop-off location is ascertained. Instead, Motz merely states that a 'desired path' is 'used'. The use of a desired path provides no teaching of suggestion of identifying a path by a data processor – or the use of the same data processor in a material/truck drop-off location path that was used in identifying a forwarder/material path.

Third, this assertion does not establish any teaching/suggestion that a desired path is determined between a forwarder location and an unloaded material location, for similar reasons to those given above with respect to Claim 10 and the fixed-hitch connection between the forwarder and the material.

3. *Claim 25*

Appellant initially urges error in the rejection of Claim 25 for reasons given above with respect to Claim 23 (of which Claim 25 depends upon), as the newly cited reference to Hayami does not overcome the teaching/suggestion deficiencies identified hereinabove with respect to such claim.

Further with respect to Claim 25, such claim recites "a reading device reading a marker for referencing the stored data, wherein the marker is associated with the harvested material that is unloaded from the harvester". As can be seen, Claim 25 also recites marker characteristics as well as an associated device for reading such marker. In particular, the 'marker' is associated with the *harvested material that is unloaded from the harvester.*

The Examiner alleges that all aspects of Claim 25 are described by Motz at page 8, lines 6-19, since there Motz describes an ability to read various 'data'. Appellant urges that such 'various data' is very different from the claimed 'marker' as such data is not described as having the particular characteristics of the claimed 'marker' that are expressly recited in the claims. For example, this Motz 'various data' is not described as being associated with the *harvested material that is unloaded from the harvester*, as claimed. Thus, it if further urged that Claim 25 has been erroneously rejected due to these additional prima facie obviousness deficiencies.

Still further, this assertion does not establish any teaching/suggestion that a desired path is determined between a forwarder location and an unloaded material location, for similar reasons to those given above with respect to Claim 10 and the fixed-hitch connection between

the forwarder and the material – further evidencing that Claim 25 has been erroneously rejected.

4. ***Claims 26 and 27***

Appellant initially urges error in the rejection of Claim 26 for reasons given above with respect to Claim 23 (of which Claim 26 depends upon), as the newly cited reference to Hayami does not overcome the teaching/suggestion deficiencies identified hereinabove with respect to such claim.

Further with respect to Claim 26, such claim recites "an estimator for estimating economic cost factors associated with corresponding candidate paths or segments of candidate paths between the forwarder location and the material location". As can be seen, an estimator is provided for estimating economic cost factors associated with corresponding candidate paths or segments of candidate paths *between the forwarder location and the material location*. For similar reasons to those given above with respect to Claim 10 and *the fixed-hitch connection between the forwarder and the material*, there would have been no reason or other motivation for a person of ordinary skill in the art to have modified the teachings of Motz to include such estimator since there is no plurality of 'candidate paths/segments' between the forwarder and material in the fixedly-attached grain cart for which economic cost factors would be estimated by an estimator. Thus, it is further urged that Claim 26 has been erroneously rejected.

5. ***Claim 28***

Appellant urges error in the rejection of Claim 28 for reasons given above with respect to Claim 23 (of which Claim 28 depend upon), as the newly cited reference to Hayami does not overcome the teaching/suggestion deficiencies identified hereinabove with respect to such claim.

E. CONCLUSION

As shown above, the Examiner has failed to state valid rejections against any of the claims. Therefore, Appellant requests that the Board of Patent Appeals and Interferences reverse the rejections. Additionally, Appellant requests that the Board direct the Examiner to allow the claims.

Date: March 29, 2010

Respectfully submitted,

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CLAIMS APPENDIX

The text of the claims involved in the appeal is as follows:

1. A data processing system implemented method for locating harvested material, the method comprising:

receiving, by the data processing system, material data including material location data on a material location of unloaded harvested material within a work area, wherein the unloaded harvested material is unloaded from a harvester that harvested the harvested material;

obtaining, by the data processing system, background data on at least one established transportation path within the work area;

determining, by the data processing system, a forwarder location of a forwarder;

estimating, by the data processing system, economic cost factors associated with corresponding candidate paths or segments of candidate paths between the forwarder location and the material location; and

selecting, by the data processing system, a preferential path plan between the forwarder location and the material location consistent with the background data and minimization of the economic cost factors, wherein the material location of the unloaded harvested material is a different location than the forwarder location of the forwarder.

2. The method according to claim 1 further comprising:

establishing a drop-off location for the unloaded harvested material;

determining a path plan between the material location and the drop-off location.

3. The method according to claim 1 wherein the path plan comprises a shortest possible path that traverses at least one of a harvested area, an unharvested area, and a transportation path associated with the work area.

4. The method according to claim 3 further comprising receiving harvester data including harvester location data on a harvester location of a harvester within the work area, wherein the material location of the unloaded harvested material is a different location than the harvester location of the harvester, and wherein the material location and the harvested area is updated on a regular basis.

5. The method according to claim 1 wherein the unloaded harvested material comprises a material selected from the group consisting of grain, wood, cellulose, logs, and crops and the material is distinguished from one another by an optical sensor.

6. The method according to claim 1 wherein the material location is updated after the addition of a new material location.

7. The method according to claim 1 wherein the background data comprises transient data associated with at least one of a time-dependent location of a machine in the work area, a time-dependent location of a person within the work area, and a time-dependent definition of a harvested area associated with the work area, and wherein both the background data and the material data are specified by a user using a user interface of the data processing system.

8. The method according to claim 1 wherein selecting a preferential path plan further comprises considering environmental factors to reduce soil compaction from the forwarder.

9. The method according to claim 1 wherein selecting a preferential path plan further comprises considering vehicle dynamic constraints related to the handling and maneuvering capabilities of the forwarder that is transporting a certain corresponding level of a load of the harvested material.

10. A data processing system implemented method for locating harvested material, the method comprising:

collecting, by the data processing system, material data including at least one of material location data, a material identifier, a material attribute, and a material attribute value, wherein the material location data, the material identifier, the material attribute, and the material attribute value are each associated with the harvested material;

obtaining, by the data processing system, background data for the work area;

storing, by the data processing system, the collected material data and the obtained background data;

making available the stored data to a forwarder;

receiving the stored data via an electromagnetic signal;

determining a forwarder location of the forwarder in the work area;

identifying a preferential path plan with an efficient path cost between the forwarder location and a material location and between the material location and the drop-off destination based on the stored data, including the material data and the background data, and based on cost

factor data, wherein the material location is a location of the harvested material unloaded from a harvester that harvested the harvested material.

11. The method according to claim 10 wherein the collected material data is stored in response to unloading the harvested material from the harvester, and wherein the making available comprises transmitting the stored data from the harvester directly to the forwarder via an electromagnetic signal that the harvester transmits to the forwarder.

12. The method according to claim 10 wherein the obtaining background data comprises obtaining obstruction data, hazard data, ground cover data, topographical data, established transportation route data, established transportation path data, and vegetation data for at least part of the work area.

13. The method according to claim 10 wherein the obtaining background data comprises (i) obtaining static data and transient data as the background data, wherein the static data remains generally constant over a greater sample period and wherein the transient data tends to vary over the greater sample period, and (ii) providing a user interface that allows a user to override the background data that is obtained.

14. A data processing system implemented method for facilitating locating harvested material, the method comprising:

collecting, by the data processing system, material data including at least two of material location data, a material identifier, a material attribute, and a material attribute value, wherein the material location data, the material identifier, the material attribute, and the material attribute value are each associated with the harvested material, and wherein the harvested material is material that has been unloaded from a harvester that harvested the material; and

marking the harvested material with a marker for referencing the collected material data, wherein the marker is at least one of a bar code, a uniform product code (UPC), an optical code, a radio frequency identification tag, an optical tag, and a tag, and the marker is usable to locate the harvested material that has been unloaded from the harvester.

15. The method according to claim 14, further comprising reading the marker associated with the harvested material by a forwarder that includes forwarder electronics.

16. The method according to claim 10 further comprising:

obtaining background data via forwarder electronics for supplementing, augmenting or replacing the stored background data.

17. The method according to claim 10 further comprising:

presenting the preferential path plan to the operator via a user interface.

18. The method according to claim 10 wherein the cost factor data comprises one or more of the following items: estimated travel time between a starting point and a destination point of a candidate path plan or segment, empirical travel time between a starting point and a destination point of candidate path plan or segment, a travel distance between a starting point and a destination point of a candidate path plan or segment, and a travel distance between the material location and one or more corresponding drop-off locations.

19. The method according to claim 14 further comprising:

reading the marker for referencing the stored data;

determining, in response to the reading of the marker, a forwarder location of a forwarder in the work area;

identifying a preferential path plan with an efficient path cost between the forwarder location and a material location of the harvested material that has been unloaded from the harvester and between the material location and the drop-off destination based the stored data, including material data and background data, and based on cost factor data.

20. The method according to claim 19 further comprising:

obtaining background data via forwarder electronics for supplementing, augmenting or replacing the stored background data.

21. The method according to claim 19 further comprising:

presenting the preferential path plan to the operator.

22. The method according to claim 19 wherein the cost factor data comprises one or more of the following items: estimated travel time between a starting point and a destination point of a candidate path plan or segment, empirical travel time between a starting point and a destination point of candidate path plan or segment, a travel distance between a starting point and a destination point of a candidate path plan or segment, and a travel distance between the material location and one or more corresponding drop-off locations.

23. A system for locating harvested material in a work area, the system comprising:

a harvested material attribute sensor for collecting material data including at least two of material location data, a material identifier, a material attribute, and a material attribute value, wherein the material location data, the material identifier, the material attribute, and the material attribute value are each associated with the harvested material;

a navigational/environmental sensor for obtaining background data for the work area;

a storage device for storing the collected material data and the obtained background data; and

a wireless communications device for making available the stored data to a forwarder, wherein the material location data indicates a material location of harvested material unloaded from a harvester that harvested the harvested material.

24. The system according to claim 23 further comprising:

another wireless communications device for receiving the stored data via an electromagnetic signal;

a location-determining receiver for determining a forwarder location of a forwarder in the

work area; and

a data processor for identifying a preferential path plan with an efficient path cost between the forwarder location and the material location of the harvested material unloaded from the harvester and between the material location and the drop-off destination based the stored data, including the material data and the background data, and based on cost factor data.

25. The system according to claim 23 further comprising:

a reading device reading a marker for referencing the stored data, wherein the marker is associated with the harvested material that is unloaded from the harvester;

another location-determining receiver for determining a forwarder location of a forwarder in the work area;

a data processor for identifying a preferential path plan with an efficient path cost between the forwarder location and the material location of the harvested material unloaded from the harvester and between the material location and the drop-off destination based the stored data, including material data and background data, and based on cost factor data.

26. The system according to claim 23 wherein the data processor further comprises:

an estimator for estimating economic cost factors associated with corresponding candidate paths or segments of candidate paths between the forwarder location and the material location; and

a selector for selecting a preferential planned path between the forwarder location and the material location consistent with the transient data, the background data, and minimization of the economic cost factors.

27. The system according to claim 26 wherein the data processor further comprises a guidance module for presenting guidance information on the selected preferential path plan to a user via a user interface.

28. The system according to claim 23 further comprising a user interface for entering the material data to supplement or complement an output of the harvested material attribute sensor.

29. The system according to claim 23 further comprising:

a central processor determining the preferential path plan from the collected material data and background data collected by one or more harvesters and sending the determined preferential path plan to a plurality of forwarders operating in the work area.

EVIDENCE APPENDIX

This appeal brief presents no additional evidence.

RELATED PROCEEDINGS APPENDIX

This appeal has no related proceedings